Oracle Linux 7: Advanced Administration Ed 1

Duration: 5 Days

What you will learn

This Oracle Linux 7: Advanced Administration training is ideal for experienced administrators who need to learn more about Oracle Linux 7. You'll learn how to configure networking services and authentication services, implement virtualization technologies to more effectively manage system resources, perform advanced storage administration tasks, implement shared storage technologies, and develop advanced troubleshooting skills. In this course, you will be introduced to the Oracle IaaS Cloud Solution.

Learn To:

Configure DNS, DHCP, HTTP, Samba, and other network services.
Configure LDAP, PAM, and other authentication services.
Automate installation using Kickstart.
Recover from boot errors.
Use advanced package management features.
Configure network bonding, VLANs, and VPNs.
Implement Linux Containers, Docker, KVM and other virtualization services.
Allocate system resources to specific Linux processes.
Use DTrace to identify performance bottlenecks.
Configure iSCSI, device multipathing, and OCFS2.
Gain an understanding of the Oracle IaaS Cloud Solution.

Benefits to You

After taking this course, you will be equipped to use the advanced features of Oracle Linux 7 to get the most out of your systems and applications. You'll learn how to automate Oracle Linux installations and implement networking and authentication services to facilitate the management of a large number of systems. You'll also learn how to use Control Groups, Linux Containers, Docker, and KVM to increase your resource utilization by creating secure, isolated environments on a single host. Become familiar with advanced storage features, including encrypted file systems, disk quotas, iSCSI, device multipathing, and the OCFS2 file system to better use your storage resources.

Gain Hands-On Experience

Extensive hands-on practices will guide you through each concept. You will configure network services and authentication services, configure network storage, shared file system types, and device multipathing. You will also configure different virtualization technologies to better utilize system resources such as CPU, memory, network and I/O bandwidth, and to allocate these system resources to critical processes.

Audience

Data Center Manager
Support Engineer
System Administrator
System Integrator

Related Training

Required Prerequisites

Student should be able to Install Oracle Linux 7

Students should be knowledgeable with Disk partitioning and creation and maintenance of Linux file systems & Software

package installation

Students should be knowledgeable with User and Group administration & Security administration using firewalld

Students should be knowledgeable with the systemd system & service manager and Network interface configuration

files and network configuration

Oracle Linux 7: System Administration Ed 1

Suggested Prerequisites
Oracle Linux 5 & 6 Advanced Administration

Oracle Linux 5 & 6 System Administration

Course Objectives
Explore your system using Dynamic Tracing (DTrace)

Configure server virtualization with KVM

Configure network addressing and authentication services

Configure Apache web services

Automate installation using Kickstart

Configure resource management using Control Groups (cgroups)

Configure operating system-level virtualization with Linux Containers (LXC)

Configure application containers with Docker

Configure iSCSI shared storage

Configure Device Mapper Multipathing

Create Udev rules for persistent device naming

Configure a shared disk cluster file system using Oracle Cluster File System Version 2 (OCFS2)

Collect and analyze core dumps

Configure and use SELinux

Perform advanced software package management

Gain an understanding of the Oracle IaaS Cloud Solution

Course Introduction
Virtualization
Elements of course environment
Course structure

Network Addressing and Name Services
Introduction to DHCP
Configuring a DHCP server
Configuring a DHCP client
Introduction to DNS
DNS Nameserver types
Configuring a DNS Cache-Only Nameserver
Configuring an Authoritative Nameserver
Querying a DNS Nameserver

Authentication and Directory Services
Introduction to authentication and directory services
Configuring LDAP authentication
Configuring Winbind authentication
Configuring Kerberos authentication
Configuring IPA Identity Management and Authentication Services
Configuring SSSD services and domains

Pluggable Authentication Modules (PAM)
Introduction to PAM
PAM Configuration Files
PAM Authentication Modules
PAM Module Types
PAM Control Flags
PAM implementation examples

Web and Email Services
Introduction to the Apache HTTP server
Configuring Apache
Email Program Classifications
Email Protocols
Postfix SMTP Server
Sendmail SMTP Server

Configuring Sendmail on a Client

Installing Oracle Linux by using Kickstart
Introduction to the Kickstart installation method
Creating the the Kickstart file
Starting a Kickstart installation
Booting into Rescue mode to correct boot problems

Samba Services
Introduction to Samba
Samba Server Configuration
Samba Server Types
Accessing Linux Shares from Windows
Accessing Windows Shares from Linux

Advanced Software Package Management
Software Management with RPM and Yum
Performing a binary RPM build
Performing package maintenance with Yum
Managing the Yum cache and Yum history
Installing and use Yum plug-ins
Using the PackageKit GUI

Advanced Storage Administration
Creating Access Control Lists (ACLs)
Enabling Disk Quotas
Configuring Encrypted Block Devices
Using kpartx
Introduction to udev
Creating udev rules

Advanced Networking
Introduction to Network Bonding
Configuring Network Bonding
Introduction to VLANs
Configuring VLANs
Introduction to VPNs
Configuring a Site-to-Site VPN

OCFS2 and Oracle Clusterware
Introduction to OCFS2
Configuring OCFS2
OCFS2 Tuning and Debugging
Introduction to Oracle Clusterware

iSCSI and Multipathing
Introduction to iSCSI
Configuring iSCSI Targets
Configuring iSCSI Initiators
Introduction to Device Mapper Multipathing
Configuring iSCSI Multipathing

Managing Resources with Control Groups (cgroups)
Introduction to Control Groups
Control Group Implementation in Oracle Linux 7
systemd slice units
systemd scope units
Displaying the Cgroup Tree of Specific Services and Scopes
Viewing cgroup Resource Control Settings
Controlling Access to System Resources
Modifying Unit Configuration Files

Virtualization with Linux
Virtualization Concepts
Virtualization Modes
Linux and Xen Integration
Running Linux in a Virtual Machine
Linux as a Virtualization Provider
Introduction to KVM
Creating a KVM Virtual Machine
Managing the Life Cycle of a Virtual Machine

Virtualization with Linux Containers
Introduction to Linux Containers
Linux Container template scripts
Creating a Linux Container by using the Oracle template script
Working with Linux Containers

Docker
Introduction to Docker
The Docker Hub Registry
Installing and Configuring Docker
Working with Docker Images and Docker Containers

Security Enhanced Linux (SELinux)
 Introduction to SELinux
SELinux Modes
SELinux Policies
SELinux Booleans
SELinux File Labeling
SELinux Context
SELinux Users

Core Dump Analysis
System Core Collection: Kexec and Kdump
Kernel Tuning Parameters
Magic SysRq Keys
Using the crash Utility

Dynamic Tracking with DTrace
Introduction to DTrace
DTrace-Enabled Applications
DTrace Probes
DTrace Providers

DTrace Actions
Built-in D Variables
D Scripts

Oracle Cloud Computing
Overview of the different Oracle Cloud Solutions
Oracle-Provided Linux Images on the Cloud
Workflow to Create Your First Oracle Linux Instance on the Cloud
Create an Entire Virtualized Topology Using Orchestrations JSONs